

REMARKS

In the final office action, the Examiner maintained the rejections to claims 1-5, 8, 15, 18, 19, and 20 under 35 U.S.C. §102(e) as being anticipated by Struzik et al. and the rejections to claims 6, 7, and 13 under 35 U.S.C. §103 as being unpatentable over Struzik et al. The Examiner deemed claims 9, 10, 12, 14, 16, and 17 to be allowable if rewritten in independent form. Claim 11 was also not specifically rejected.

In this response, Applicants have not made any amendments, but resubmit claims 1-20 for reconsideration and request withdrawal of the rejections in view of the following remarks.

A. Examiner Interview:

Applicants thank the Examiner for agreeing to partake in a telephone interview on December 7, 2004 with Applicants' attorney, Thomas P. Canty. During the interview the Struzik et al. reference was discussed with reference to claim 1. Mr. Canty presented the arguments that Struzik et al. does not describe the features of a "transverse force absorbing guide element", first and second connection structures "being moveable with respect to each other," and a sacrificial element "uncoupled from a transverse load path of the transverse force-absorbing guide element" as those features are recited in independent claim 1.

No exhibits were shown. No agreement was reached.

B. Rejections under 35 U.S.C. §102(e):

Claims 1-5, 8, 15, 18, 19, and 20 were rejected under 35 U.S.C. §102(e) as being anticipated by Struzik et al.

Struzik et al. describes a gearbox suspension strut for rotary wing aircraft. The Struzik et al. strut is designed to connect two components and to undergo "tensile/compressive stresses" (see Abstract) and is described in more detail in Applicants' previous response.

Applicants' invention differs in several important respects from the Struzik et al. strut. Independent claim 1 recites an impact-absorbing, load-limiting connection device that includes:

- a first connection structure;
- a second connection structure, at least one of the first and second connection structures being moveable with respect to the other in a predetermined direction of movement corresponding to an anticipated main impact direction;

a guiding mechanism configured to guide at least one of the first and second connection structures along the direction of movement, the guiding mechanism including at least one transverse force-absorbing guide element configured to absorb a force in a direction transverse to the direction of movement; and

at least one impact-absorbing, load-limiting sacrificial element disposed between the first connection structure and the second connection structure and uncoupled from a transverse load path of the transverse force-absorbing guide element, wherein the sacrificial element is configured to be deformed and destroyed by a relative movement between the first and second connection structures in the direction of movement upon application of a predetermined maximum load.

Applicants respectfully submit that Struzik et al. does not describe at least the features of (1) a “transverse force absorbing guide element”; (2) a sacrificial element “uncoupled from a transverse load path of the transverse force-absorbing guide element”; and (3) first and second connection structures “being moveable with respect to each other”, as those features are recited in independent claim 1.

Referring to the first feature, the Struzik et al. strut, by its very nature, does not include a transverse force absorbing guide element “configured to absorb a force in a direction transverse to the direction of movement.” It is a fundamental principle of mechanical engineering that a strut can be used to absorb forces acting along its axis, but is not configured to absorb forces acting transverse to the axis. As defined by the Miriam-Webster online dictionary, for example, a strut is “a structural piece designed to resist pressure in the direction of its length.” The Struzik et al. strut is no different.

The Examiner asserts that piston 23 and energy-absorbing component 20 of Struzik et al. are transverse force-absorbing guides. However, Applicants submit that the disclosure of Struzik et al. provides no suggestion for how those elements are “configured to absorb a force in a direction transverse to the direction of movement.” On the contrary, those elements are clearly described as being configured to absorb a force acting in the same direction as the direction of movement. See, e.g., Figs. 4 and 5 and paragraph [0058] of Struzik et al. Applicants can not find any description or other basis in Struzik et al. to support the Examiner’s assertion that those elements 20 and 23 are somehow configured to absorb a transverse load.

With regard to the second feature, assuming that the force absorbed by components 23 and 20 is a transverse force (which Applicants dispute), Applicants submit that the “sacrificial

element” identified by the Examiner (buckling portion 17) is not “uncoupled from a transverse load path of the” guide element, as recited in claim 1. On the contrary, as described in detail in Struzik et al., buckling portion 17 lies directly along the load path causing piston 23 to interact with component 20. In fact, the buckling of portion 17 under the load is what enables the interaction between components 23 and 20 in the first place. “The buckling of this portion 17 causes axial shortening of the strut 13, marked ‘c’ in Fig. 5, and therefore movement of the piston 23 . . . By this movement, the piston 23 crushes the energy-absorbing component 20 axially against the base 22.” Paragraph [0058]. Therefore, portion 17, cannot be properly said to be “uncoupled” from the load path of the guide element.

Finally, with respect to the third feature, Applicants respectfully submit the two ends of hollow body 14 cannot properly be deemed be the first and second connection structures as recited in claim 1. The Examiner asserts that the first end of body 14 (rigid upper end part 18) and the second part of the same body (tubular part 19/truncated cone 21) are “movable” with respect to one another. Applicants submit that the Examiner’s interpretation: that first and second connection structures “being moveable with respect to” one another can read on two ends of a single rigid body 14 defies the plain meaning of the claim. In the embodiments disclosed in Applicants’ specification, the first and second connection structures are clearly structurally distinct parts (2 and 24 in Figs. 1-3, 44 and 46 in Figs. 4 and 6) that are moveable with respect to one another. Interpreting two ends of a single rigid body as being moveable with respect to one another, (such as by being bent towards one another), stretches the meaning of the term “moveable” beyond its acceptable plain meaning. For example, one would not ordinarily refer to two sides of a penny as being “moveable” with respect to each other, even though, if one places the penny on a railroad track, the two sides will “move” toward one another as the train passes over.

For at least the above reasons, therefore, Applicants respectfully request withdrawal of the rejections to independent claims 1 and to dependent claims 2-5, 8, 15, 18, 19, and 20.

C. Rejections under 35 U.S.C. §103:

Claims 6, 7, and 13 were rejected under 35 U.S.C. §103 as being unpatentable over Struzik et al.

Applicants respectfully submit that Struzik et al. does not suggest many of the features of claim 1. For example, by describing a device that is only capable of absorbing compressive and tensile forces (i.e. forces in a direction of impact), Struzik et al. provides no suggestion for, and actually teaches away from, the feature of a "transverse force-absorbing guide" as recited in claim 1.


Withdrawal of the rejections to s 6, 7, and 13 under 35 U.S.C. §103 is respectfully requested.

Conclusion

Reconsideration of the present application, as amended, is requested. If, upon review, the Examiner is unable to issue an immediate Notice of Allowance, the Examiner is respectfully requested to telephone Applicant's undersigned attorney in order to resolve any outstanding issues and advance the prosecution of the case.

An early and favorable action on the merits is earnestly solicited.

Respectfully Submitted,
DAVIDSON, DAVIDSON & KAPPEL, LLC

By: 
William C. Gehris, Reg. No. 38,156
(signing for Thomas P. Canty, Reg. No. 44,586)

Davidson, Davidson & Kappel, LLC
485 Seventh Avenue, 14th Floor
New York, NY 10018
(212) 736-1940